CONTENTS OF VOLUME 33

JANUARY 1999 VOLUME 33 NUMBER 1

50TH ANNIVERSARY HISTORICAL ARTICLE

1 **Ischemic Heart Disease** *C. Richard Conti*

CLINICAL STUDIES

REVIEW ARTICLES

5 **The Brugada Syndrome: Clinical, Electrophysiologic and Genetic Aspects** *Ihor Gussak, Charles Antzelevitch, Preben Bjerregaard, Jeffrey A. Towbin, Bernard R. Chaitman*

ELECTROPHYSIOLOGY

16 **The North American Vasovagal Pacemaker Study (VPS). A Randomized Trial of Permanent Cardiac Pacing for the Prevention of Vasovagal Syncope** *Stuart J. Connolly, Robert Sheldon, Robin S. Roberts, Michael Gent on Behalf of the Vasovagal Pacemaker Study Investigators*

21 Editorial Comment **Cardiac Pacing for Prevention of Vasovagal Syncope** *David G. Benditt*

24 **Sudden Death in Implantable Cardioverter-Defibrillator Recipients: Clinical Context, Arrhythmic Events and Device Responses** *Luis A. Pires, Michael H. Lehmann, Russell T. Steinman, John J. Baga, Claudio D. Schuger and Participating Investigators*

33 **The Influence of Ventricular Fibrillation Duration on Defibrillation Efficacy Using Biphasic Waveforms in Humans** *Stephan Windecker, Raymond E. Ideker, Vance J. Plumb, G. Neal Kay, Gregory P. Walcott, Andrew E. Epstein*

39 **Role of Bipolar Electrogram Polarity Mapping in Localizing Recurrent Conduction in the Isthmus Early and Late After Ablation of Atrial Flutter** *Hiroshige Yamabe, Ken Okumura, Ikuo Misumi, Hironobu Fukushima, Kazuhiro Ueno, Yoshihiro Kimura, Youichi Hokamura*

46 **Suppression of Sustained Ventricular Tachyarrhythmias: A Comparison of d,l-Sotalol With No Antiarrhythmic Drug Treatment** *Volker Kühlkamp, Christian Mewis, Johannes Mermi, Ralph F. Bosch, Ludger Seipel*

53 Editorial Comment **Efficacy and Efficacy Testing of Sotalol** *Jay W. Mason*

55 **Detection of Concealed Left Sided Accessory Atrioventricular Pathway by P Wave Signal Averaged Electrocardiogram** *Teruhisa Yoshida, Hisao Ikeda, Tatsuro Hiraki, Ichiro Kubara, Masanobu Ohga, Tsutomu Imaizumi*

INTERVENTIONAL CARDIOLOGY

63 **A Comparison of Three-Year Survival After Coronary Artery Bypass Graft Surgery and Percutaneous Transluminal Coronary Angioplasty** *Edward L. Hannan, Michael J. Racz, Ben D. McCallister, Thomas J. Ryan, Djavad T. Arani, O. Wayne Isom, Robert H. Jones*

73 **Effect of Transient Abrupt Vessel Closure During Otherwise Successful Angioplasty for Unstable Angina on Clinical Outcome at Six Months** *Robert N. Piana, Waqar H. Ahmed, Bernard Chaitman, Peter Ganz, Scott Kinlay, John Strony, Burt Adelman, John A. Bittl, on Behalf of The Hirulog Angioplasty Study Investigators*

79 Editorial Comment **The Ill Wind of Transient Vessel Closure During Percutaneous Transluminal Coronary Angioplasty** *Peter C. Block*

82 **Safety of Deferring Angioplasty in Patients With Normal Coronary Flow Velocity Reserve** *Markus Ferrari, Bärbel Schnell, Gerald S. Werner, Hans R. Figulla*

88 **Clinical Outcomes After Detection of Elevated Cardiac Enzymes in Patients Undergoing Percutaneous Intervention** *Barbara E. Tardiff, Robert M. Califf, James E. Tcheng, A. Michael Lincoff, Kristina N. Sigmon, Robert A. Harrington, Kenneth W. Mahaffey, E. Magnus Ohman, Paul S. Teirstein, James C. Blankenship, Michael M. Kitt, Eric J. Topol, for the IMPACT-II Investigators*

97 **Chimeric 7E3 Fab (ReoPro) Decreases Detectable CD11b on Neutrophils From Patients Undergoing Coronary Angioplasty** *Judith K. Mickelson, M. Nadir Ali, Neal S. Kleiman, Nasser M. Lakkis, Thomas W. Chow, Bonnie J. Hughes, C. Wayne Smith*

MYOCARDIAL INFARCTION

107 **Unstable Angina and Non-Q Wave Myocardial Infarction: Does the Clinical Diagnosis Have Therapeutic Implications?** *Stephen M. Zaacks, Philip R. Liebson, James E. Calvin, Joseph E. Parrillo, Lloyd W. Klein*

119 **Sulfonylurea Drugs Increase Early Mortality in Patients With Diabetes Mellitus After Direct Angioplasty for Acute Myocardial Infarction** *Kirk N. Garratt, Peter A. Brady, Nancy L. Hassinger, Diane E. Grill, Andre Terzic, David R. Holmes, Jr.*

125 **Influence of Baseline Lipids on Effectiveness of Pravastatin in the CARE Trial** *Marc A. Pfeffer, Frank M. Sacks, Lemuel A. Moyé, Cara East, Steven Goldman, David T. Nash, Jacques R. Rouleau, Jean Lucien Rouleau, Bruce A. Sussex, Pierre Theroux, Ron J. Vanden Belt, Eugene Braunwald*

131 **Risk Stratification Following Myocardial Infarction in the Thrombolytic Era: A Two-Step Strategy Using Noninvasive and Invasive Methods** *Dietrich Andresen, Gerhard Steinbeck, Thomas Brüggemann, Dirk Müller, Ralph Haberl, Steffen Behrens, Ellen Hoffmann, Karl Wegscheider, Rüdiger Dissmann, Hans-Christoph Ehlers*

139 **Effects of Early Captopril Administration After Thrombolysis on Regional Wall Motion in Relation to Infarct Artery Blood Flow** *John K. French, David J. Amos, Barbara F. Williams, David B. Cross, John M. Elliott, Hamish H. Hart, Miles G. Williams, Robin M. Norris, Noel G. Ashton, Ralph M. L. Whitlock, Stephanie C. McLaughlin, Harvey D. White*

ATHEROSCLEROSIS

146 **Morphological Onset and Early Diagnosis in Apical Hypertrophic Cardiomyopathy: A Long Term Analysis With Nuclear Magnetic Resonance Imaging** *Jun-Ichi Suzuki, Ryoichi Shimamoto, Jun-ichi Nishikawa, Tadashi Yamazaki, Taeko Tsuji, Fumitaka Nakamura, Wee Soo Shin, Toshiaki Nakajima, Teruhiko Toyo-Oka, Kuni Ohotomo*

152 **The Prevalence of *Chlamydia pneumoniae* in Atherosclerotic and Nonatherosclerotic Blood Vessels of Patients Attending for Redo and First Time Coronary Artery Bypass Graft Surgery** *Yuk-ki Wong, Martine Thomas, Victor Tsang, Patrick J. Gallagher, Michael E. Ward*

157 **Association Between Apolipoprotein(a) Phenotypes and Coronary Heart Disease at a Young Age** *Carmine Gazzaruso, Adriana Garzaniti, Paola Buscaglia, Graziella Bonetti, Colomba Falcone, Pietro Fratino, Giorgio Finardi, Diego Geroldi*

HEART FAILURE

164 **Use of Echocardiography in the Management of Congestive Heart Failure in the Community** *Michele Senni, Richard J. Rodeheffer, Christophe M. Tribouilloy, Jonathan M. Evans, Steven J. Jacobsen, Kent R. Bailey, Margaret M. Redfield*

171 Editorial Comment **Outcomes Research: Evaluating the Impact of Echocardiography in Congestive Heart Failure** *Gottlieb C. Friesinger II*

174 **Exercise Intolerance in Patients With Chronic Heart Failure and Increased Expression of Inducible Nitric Oxide Synthase in the Skeletal Muscle** *Rainer Hambrecht, Volker Adams, Stephan Gielen, Axel Linke, Sven Möbius-Winkler, Jiangtao Yu, Josef Niebauer, Hong Jiang, Eduard Fiehn, Gerhard Schuler*

180 **Ejection Fraction by Radionuclide Ventriculography and Contrast Left Ventriculogram. A Tale of Two Techniques** *Pedro E. Ureña, Gervasio A. Lamas, Gary Mitchell, Greg C. Flaker, Sidney C. Smith, Jr., Frans J. Wackers, Patricia McEwan, Marc A. Pfeffer, for the SAVE Investigators*

186 **Cardiac and Systemic Sympathetic Activity in Response to Clonidine in Human Heart Failure** *Eduardo R. Azevedo, Gary E. Newton, John D. Parker*

HEART TRANSPLANT

192 **Chronotropic Competence in Endurance Trained Heart Transplant Recipients: Heart Rate is not a Limiting Factor for Exercise Capacity** *Ruddy Richard, Jean-Claude Verdier, Alain Duvallet, Sully-Pierre Rosier, Philippe Leger, Alexis Nignan, Michel Rieu*

HYPERTROPHIC CARDIOMYOPATHY

198 **Histological Evaluation of Coronary Plaque in Patients With Variant Angina: Relationship Between Vasospasm and Neointimal Hyperplasia in Primary Coronary Lesions** *Hiromasa Suzuki, Sachio Kawai, Tadanori Aizawa, Kazuzo Kato, Satoshi Sunayama, Ryozo Okada, Hiroshi Yamaguchi*

206 **Prognosis of Completely Asymptomatic Adult Patients With Hypertrophic Cardiomyopathy** *Eiji Takagi, Tetsu Yamakado, Takeshi Nakano*

VAVULAR DISEASE

212 **Left Atrial Filling Volume Can Be Used to Reliably Estimate the Regurgitant Volume in Mitral Regurgitation** *Andrea Rossi, Giorgio Golia, Giampaolo Gasparini, Maria Antonia Prioli, Maurizio Anselmi, Piero Zardini*

218 Editorial Comment **Left Atrial Filling Revisited: A Noninvasive Index in Quantifying the Severity of Mitral Regurgitation** *Morris N. Kotler, Larry E. Jacobs*

CONGENITAL HEART DISEASE

222 **Noncardiac Surgery in Eisenmenger Syndrome** *Naser M. Ammash, Heidi M. Connolly, Martin D. Abel, Carole A. Warnes*

PEDIATRIC CARDIOLOGY

228 **Echocardiographic Diagnosis Alone for the Complete Repair of Major Congenital Heart Defects** *Wayne Tworetzky, Doff B. McElhinney, Michael M. Brook, V. Mohan Reddy, Frank L. Hanley, Norman H. Silverman*

EXPERIMENTAL STUDIES

234 **Pravastatin Sodium Activates Endothelial Nitric Oxide Synthase Independent of Its Cholesterol-Lowering Actions** *Wayne H. Kaesemeyer, Ruth B. Caldwell, Jianzhong Huang, R. William Caldwell*

242 **A Ca Channel Blocker, Benidipine, Increases Coronary Blood Flow and Attenuates the Severity of Myocardial Ischemia via NO-Dependent Mechanisms in Dogs** *Masafumi Kitakaze, Koichi Node, Tetsuo Minamino, Hiroshi Asanuma, Tsunehiko Kuzuya, Masatsugu Hori*

250 **Role of Microtubules in the Contractile Dysfunction of Hypertrophied Myocardium** *Michael R. Zile, Masaaki Koide, Hiroshi Sato, Yoshiki Ishiguro, Chester H. Conrad, J. Michael Buckley, James P. Morgan, George Cooper IV*

261 **Increased Reactivity of Platelets Induced by Fibrinogen Independent of Its Binding to the IIb-IIIa Surface Glycoprotein: A Potential Contributor to Cardiovascular Risk** *David J. Schneider, Douglas J. Taatjes, Diantha B. Howard, Burton E. Sobel*

267 **Effect of Congestive Heart Failure on In Vivo Canine Aortic Elastic Properties** *Zia Kahn, Ronald W. Millard, Marjorie Gabel, Richard A. Walsh, Brian D. Hoit*

SPECIAL SECTIONS

ACC/AHA Expert Consensus Document

273 **Use of Sildenafil (Viagra) in Patients With Cardiovascular Disease** *Melvin D. Cheitlin, Adolph M. Hutter, Jr., Ralph G. Brindis, Peter Ganz, Sanjay Kaul, Richard O. Russell, Jr., Randall M. Zusman*

EDITOR'S PAGE

283 **ACC—50 Years of Excellence** *William W. Parmley*

ACC News

285 **President's Page: Interventional Cardiology (ACCIS '99): Responding to Members' Educational Needs** *Spencer B. King III*

287 **LETTERS TO THE EDITOR**

289 **CORRECTION**

FEBRUARY 1999 VOLUME 33 NUMBER 2

50TH ANNIVERSARY HISTORICAL ARTICLE

291 **Heart Failure** *Gary S. Francis*

REVIEW ARTICLE

295 **A Perspective on the Potential Problems With Aspirin as an Antithrombotic Agent: A Comparison of Studies in an Animal Model With Clinical Trials** *John D. Folts, Andrew I. Schafer, Joseph Loscalzo, James T. Willerson, James E. Muller*

CLINICAL STUDIES

ELECTROPHYSIOLOGY

304 **Ventricular Rate Control in Chronic Atrial Fibrillation During Daily Activity and Programmed Exercise: A Crossover Open-Label Study of Five Drug Regimens** *Ramin Farshi, Deborah Kistner, Jonnalagedda S. M. Sarma, Jeffrey A. Longmate, Bramah N. Singh*

311 **Optimal Right Ventricular Pacing Site in Chronically Implanted Patients: A Prospective Randomized Cross-over Comparison of Apical and Outflow Tract Pacing** *Frederic Victor, Christophe LeClercq, Philippe Mabo, Dominique Pavin, Anne Deviller, Christian de Place, Philippe Pezard, Jacques Victor, Claude Daubert*

317 **Influence of Right Ventricular Stimulation Site on Left Ventricular Function in Atrial Synchronous Ventricular Pacing** *Bernhard Schwaab, Gerd Fröhlig, Christof Alexander, Michael Kindermann, Nicola Hellwig, Holger Schwerdt, Carl-Martin Kirsch, Hermann Schieffer*

324 Editorial Comment **Optimization of Ventricular Pacing: Where Should We Implant the Leads?** *Michael R. Gold*

327 **Auditory Stimuli as a Trigger for Arrhythmic Events Differentiate HERG-Related ($LQTS_2$) Patients From KVLQT1-Related Patients ($LQTS_1$)** *Arthur A. M. Wilde, Rosalie J. E. Jongbloed, Pieter A. Doevendans, Donald R. Düren, Richard N. W. Hauer, Irene M. van Langen, J. Peter van Tintelen, Hubert J. M. Smeets, Henk Meyer, Jan L. M. C. Geelen*

333 **Favorable Effects of Flecainide in Transvenous Internal Cardioversion of Atrial Fibrillation** *Giuseppe Boriani, Mauro Biffi, Alessandro Capucci, Gabriele Bronzetti, Gregory M. Ayers, Romano Zannoli, Angelo Branzi, Bruno Magnani*

342 **Left Atrial Mechanical Function After Brief Duration Atrial Fibrillation** *Paul B. Sparks, Shenthar Jayaprakash, Harry G. Mond, Jitendra K. Vohra, Leeanne E. Grigg, Jonathan M. Kalman*

350 **Triggering Mechanism for Neurally Mediated Syncope Induced by Head-up Tilt Test: Role of Catecholamines and Response to Propranolol** *Shuji Kikushima, Youichi Kobayashi, Haruyuki Nakagawa, Takashi Katagiri*

358 **Human Atrial Repolarization: Effects of Sinus Rate, Pacing and Drugs on the Surface Electrocardiogram** *Nadia M. G. Debbas, Steve H. D. Jackson, Daniel de Jonghe, Annie Robert, A. John Camm*

366 **Clinical Course of Persistent Junctional Reciprocating Tachycardia** *Parvin C. Dorostkar, Michael J. Silka, Fred Morady, Macdonald Dick II*

376 **Variation of P-QRS Relation During Atrioventricular Node Reentry Tachycardia** *Yasuhiro Taniguchi, San-Jou Yeh, Ming-Shien Wen, Chun-Chieh Wang, Fun-Chung Lin, Delon Wu*

385 **Improved Diagnostic Value of Combined Time and Frequency Domain Analysis of the Signal-Averaged Electrocardiogram After Myocardial Infarction** *Rafael Vázquez, Edward B. Caref, Francisco Torres, Margarita Reina, Aurora Espina, Nabil El-Sherif*

INTERVENTIONAL CARDIOLOGY

395 **A Randomized Trial Comparing the Impact of a Nonionic (Iomeprol) Versus an Ionic (Ioxaglate) Low Osmolar Contrast Medium on Abrupt Vessel Closure and Ischemic Complications After Coronary Angioplasty** *Rainer Schräder, Ingo Esch, Roland Ensslen, Wolf Andreas Fach, Hartmut Merle, Detlef Scherer, Horst Sievert, Hans Friedrich Spies, Harald E. Zeplin*

403 **A Prospective Randomized Trial of Prevention Measures in Patients at High Risk for Contrast Nephropathy: Results of the P.R.I.N.C.E. Study** *Melissa A. Stevens, Peter A. McCullough, Kenneth J. Tobin, John P. Speck, Douglas C. Westveer, Debra A. Guido-Allen, Gerald C. Timmis, William W. O'Neill*

412 **Effect of Age on Outcome With Primary Angioplasty Versus Thrombolysis** *David R. Holmes, Jr., Harvey D. White, Karen S. Pieper, Stephen G. Ellis, Robert M. Califf, Eric J. Topol*

420 **Procedural Results and Late Clinical Outcomes Following Multivessel Coronary Stenting** *Ran Kornowski, Roxana Mehran, Lowell F. Satler, Augusto D. Pichard, Kenneth M. Kent, Ann Greenberg, Gary S. Mintz, Mun K. Hong, Martin B. Leon*

427 **Real-time Measurement of Radiation Exposure to Patients During Diagnostic Coronary Angiography and Percutaneous Interventional Procedures** *Jack T. Cusma, Malcolm R. Bell, Merrill A. Wondrow, Jerome P. Taubel, David R. Holmes, Jr.*

RISK FACTORS

436 **Quantity and Function of High Density Lipoprotein as an Indicator of Coronary Atherosclerosis** *Keijiro Saku, Bo Zhang, Takao Ohta, Kikuo Arakawa*

444 **An Algorithm for Noninvasive Identification of Angiographic Three-Vessel and/or Left Main Coronary Artery Disease in Symptomatic Patients on the Basis of Cardiac Risk and Electron-Beam Computed Tomographic Calcium Scores** *Axel Schmermund, Kent R. Bailey, John A. Rumberger, Judd E. Reed, Patrick F. Sheedy II, Robert S. Schwartz*

453 **Coronary Calcification by Electron Beam Computed Tomography and Obstructive Coronary Artery Disease: A Model for Costs and Effectiveness of Diagnosis as**

Compared With Conventional Cardiac Testing Methods *John A. Rumberger, Thomas Behrenbeck, Jerome F. Breen, Patrick F. Sheedy II*

463 **Gender Differences in Myocardial Blood Flow Dynamics: Lipid Profile and Hemodynamic Effects** *Claire S. Duvernoy, Christian Meyer, Vanadin Seifert-Klauss, Firat Dayanikli, Ichiro Matsunari, Judith Rattenhuber, Cornelia Höss, Henner Graeff, Markus Schwaiger*

ACUTE CORONARY SYNDROMES

471 **Ability of Troponins to Predict Adverse Outcomes in Patients With Renal Insufficiency and Suspected Acute Coronary Syndromes: A Case-Matched Study** *Frederick Van Lente, Ellen S. McErlean, Sue A. DeLuca, W. Franklin Peacock, J. Sunil Rao, Steven E. Nissen*

THROMBOLYSIS

479 **Fatal Cardiac Rupture Among Patients Treated With Thrombolytic Agents and Adjunctive Thrombin Antagonists: Observations From the Thrombolysis and Thrombin Inhibition in Myocardial Infarction 9 Study** *Richard C. Becker, Judith S. Hochman, Christopher P. Cannon, Frederick A. Spencer, Steven P. Ball, Michael J. Rizzo, Elliott M. Antman, for the TIMI 9 Investigators*

CARDIAC SURGERY

488 **CASS Registry Long Term Surgical Survival** *William O. Myers, Eugene H. Blackstone, Kathryn Davis, Eric D. Foster, George C. Kaiser*

VASCULAR BIOLOGY

499 **Effect of Vitamin E on Endothelial Vasodilator Function in Patients With Hypercholesterolemia, Chronic Smoking or Both** *Thomas Heitzer, Seppo Ylä Herttuala, Elke Wild, Jukka Luoma, Helmut Drexler*

STRESS TESTING

506 **Nonexercise Stress Transthoracic Echocardiography: Transesophageal Atrial Pacing Versus Dobutamine Stress** *Chung-Yin Lee, Patricia A. Pellikka, Robert B. McCully, Douglas W. Mahoney, James B. Seward*

512 **Dobutamine-Atropine Stress Echocardiography for Risk Stratification in Patients with Chronic Left Ventricular Dysfunction** *Steven C. Smart, Peter N. Dionisopoulos, Thomas A. Knickelbine, Timothy Schuchard, Kiran B. Sagar*

522 **Limited Myocardial Contractile Reserve and Chronotropic Incompetence in Patients With Chronic Chagas' Disease: Assessment by Dobutamine Stress Echocardiography** *Harry Acquatella, Julio E. Pérez, Jose A. Condado, Indira Sánchez*

HEART FAILURE

530 **Relationship Between Endothelin-1 Extraction in the Peripheral Circulation and Systemic Vascular Resistance in Patients With Severe Congestive Heart Failure** *Takayoshi Tsutamoto, Atsuyuki Wada, Tomoko Hisanaga, Keiko Maeda, Masato Ohnishi, Naoko Mabuchi, Masahide Sawaki, Masaru Hayashi, Masanori Fujii, Masahiko Kinoshita*

MITRAL REGURGITATION

538 **Mechanism of Dynamic Regurgitant Orifice Area Variation in Functional Mitral Regurgitation: Physiologic Insights From the Proximal Flow Convergence Technique** *Judy Hung, Yutaka Otsuji, Mark D. Handschumacher, Ehud Schwammenthal, Robert A. Levine*

546 Editorial Comment **Doing Away With Dogma: Increasing Afterload to Reduce Mitral Regurgitation** *Thomas Wisenbaugh*

PEDIATRIC CARDIOLOGY

549 **Cardiorespiratory Responses to Negative Pressure Ventilation After Tetralogy of Fallot Repair: A Hemodynamic Tool for Patients With a Low-Output State** *Lara S. Shekerdemian, Andrew Bush, Darryl F. Shore, Christopher Lincoln, Andrew N. Redington*

EXPERIMENTAL STUDIES

556 **Renal Ischemia/Reperfusion Remotely Improves Myocardial Energy Metabolism During Myocardial Ischemia Via Adenosine Receptors in Rabbits: Effects of "Remote Preconditioning"** *Atsushi Takaoka, Ichiro Nakae, Kenichi Mitsunami, Takahiro Yabe, Shigehiro Morikawa, Toshiro Inubushi, Masahiko Kinoshita*

565 **Upregulated Expression of Cardiac Endothelin-1 Participates in Myocardial Cell Growth in Bio14.6 Syrian Cardiomyopathic Hamsters** *Tsukasa Inada, Hisayoshi Fujiwara, Koji Hasegawa, Makoto Araki, Rikako Yamauchi-Kohno, Hideo Yabana, Takako Fujiwara, Masaru Tanaka, Shigetake Sasayama*

VIEWPOINTS

572 **Inotropic Infusions for Chronic Congestive Heart Failure: Medical Miracles or Misguided Medicinals?** *Gordon A. Ewy*

576 **Q-Wave Versus Non-Q Wave Myocardial Infarction: A Meaningless Distinction** *Brendan Phibbs, Frank Marcus, H. J. C. Marriott, Arthur Moss, David H. Spodick*

EDITOR'S PAGE

583 **Do You Believe in God?** *William W. Parmley*

SPECIAL SECTIONS

ACC News

584 **President's Page: Ruminations on the 50th Anniversary: Steadfast Commitment to Our Goal While Responding to the Mandates of Change** *Spencer B. King III*

ASE/ACC Policy Statement

586 **Echocardiography in Emergency Medicine: A Policy Statement by the American Society of Echocardiography and the American College of Cardiology** *William J. Stewart, Pamela S. Douglas, Kiran Sagar, James B. Seward, William F. Armstrong, William Zoghbi, Itzhak Kronszon, Janel M. Mays, Alan S. Pearlman, Ingela Schnittger, Jeanette A. St. Vrain, Richard E. Kerber*

589 **LETTERS TO THE EDITOR**

MARCH 1, 1999 VOLUME 33 NUMBER 3

50TH ANNIVERSARY HISTORICAL ARTICLE

595 **Hypertension** *Harriet P. Dustan*

CLINICAL STUDIES

MYOCARDIAL INFARCTION

598 **Effect of Angiotensin Converting Enzyme Inhibition on Sudden Cardiac Death in Patients Following Acute Myocardial Infarction. A Meta-Analysis of Randomized Clinical Trials** *Michael J. Domanski, Derek V. Exner, Craig B. Borkowf, Nancy L. Geller, Yves Rosenberg, Marc A. Pfeffer*

605 **Primary Angioplasty Versus Systemic Thrombolysis in Anterior Myocardial Infarction** *Eulogio García, Jaime Elízaga, Nicasio Pérez-Castellano, Jose A. Serrano, Javier Soriano, Manuel Abeytua, Javier Botas, Rafael Rubio, Esteban López de Sá, Jose L. López-Sendón, Juan L. Delcán*

612 **Relationship of Glucose and Insulin Levels to the Risk of Myocardial Infarction: A Case-Control Study** *Hertzel C. Gerstein, Prem Pais, Janice Pogue, Salim Yusuf*

620 **Reciprocal ST-Segment Depression Associated With Exercise-Induced ST-Segment Elevation Indicates Residual Viability After Myocardial Infarction** *Akira Nakano, Jong-Dae Lee, Hiromasa Shimizu, Tatsuro Tsuchida, Yoshiharu Yonekura, Yasushi Ishii, Takanori Ueda*

ACUTE MYOCARDIAL INFARCTION

627 **Low Molecular Weight Heparin (Dalteparin) as Adjuvant Treatment to Thrombolysis in Acute Myocardial Infarction—A Pilot Study: Biochemical Markers in Acute Coronary Syndromes (BIOMACS II)** *Gunnar Frostfeldt, Greger Ahlberg, Gunnar Gustafsson, Gunnar Helmius, Bertil Lindahl, Anders Nygren, Agneta Siegbahn, Eva Swahn, Per Venge, Lars Wallentin*

ACUTE CORONARY SYNDROMES

634 **Platelet Activation in Patients After an Acute Coronary Syndrome: Results From the TIMI-12 Trial** *Kenneth A. Ault, Christopher P. Cannon, Jane Mitchell, John McCahan, Russell P. Tracy, William F. Novotny, James D. Reimann, Eugene Braunwald*

INTERVENTIONAL CARDIOLOGY

640 **Long-Term Outcome After Primary Angioplasty: Report From the Primary Angioplasty in Myocardial Infarction (PAMI-I) Trial** *Christopher M. Nunn, William W. O'Neill, Donald Rothbaum, Gregg W. Stone, James O'Keefe, Paul Overlie, Bryan Donohue, Lorelei Grines, Kevin F. Browne, Ronald E. Vlietstra, Tom Catlin, Cindy L. Grines, For The Primary Angioplasty in Myocardial Infarction I Study Group*

647 **The Relationship Between Periprocedural Myocardial Infarction and Subsequent Target Vessel Revascularization Following Percutaneous Coronary Revascularization: Insights From the EPIC Trial** *Craig R. Narins, Dave P. Miller, Robert M. Califf, Eric J. Topol*

MYOCARDIAL ISCHEMIA

654 **Intravenous Nicorandil Can Preserve Microvascular Integrity and Myocardial Viability in Patients With Reperfused Anterior Wall Myocardial Infarction** *Hiroshi Ito, Yoshiaki Taniyama, Katsuomi Iwakura, Nagahiro Nishikawa, Tohru Masuyama, Tsunehiko Kuzuya, Masatsugu Hori, Yorihiko Higashino, Kenshi Fujii, Takazo Minamino*

661 **The Economic Consequences of Available Diagnostic and Prognostic Strategies for The Evaluation of Stable Angina Patients: An Observational Assessment of the Value of Precatheterization Ischemia** *Leslee J. Shaw, Rory Hachamovitch, Daniel S. Berman, Thomas H. Marwick, Michael S. Lauer, Gary V. Heller, Ami E. Iskandrian, Karen L. Kesler, Mark I. Travin, Howard C. Lewin, Robert C. Hendel, Salvador Borges-Neto, D. Douglas Miller for the Economics of Noninvasive Diagnosis (END) Multicenter Study Group*

670 **Quantification of Collateral Flow in Humans: A Comparison of Angiographic, Electrocardiographic and Hemodynamic Variables** *Rob A. M. van Liebergen, Jan J. Piek, Karel T. Koch, Robbert J. de Winter, Carl E. Schotborgh, Kong I. Lie*

678 **^{13}N-Ammonia Myocardial Blood Flow and Uptake: Relation to Functional Outcome of Asynergic Regions After Revascularization** *Anastasia N. Kitsiou, Stephen L. Bacharach, Marissa L. Bartlett, Gopal Srinivasan, Ronald M. Summers, Arshed A. Quyyumi, Vasken Dilsizian*

687 **Effects of Pacing-Induced and Balloon Coronary Occlusion Ischemia on Left Atrial Function in Patients With Coronary Artery Disease** *Christodoulos Stefanadis, John Dernellis, Eleftherios Tsiamis, Pavlos Toutouzas*

697 **Recovery of Contractility of Viable Myocardium During Inotropic Stimulation Is Not Dependent on an Increase of Myocardial Blood Flow in the Absence of Collateral Filling** *Francesco Barillà, Giuseppe De Vincentis, Enrico Mangieri, Massimo Ciavolella, Gaetano Pannitteri, Francesco Scopinaro, Giuseppe Critelli, Pietro Paolo Campa*

705 Editorial Comment **Contractile Reserve and Coronary Blood Flow Reserve in Collateral–Dependent Myocardium** *Robert O. Bonow*

STRESS TESTING

708 **Prognostic Value of Dobutamine Stress Echocardiography in Predicting Cardiac Events in Patients With Known or Suspected Coronary Artery Disease** *Janine Krivokapich, John S. Child, Donald O. Walter, Alan Garfinkel*

717 **Integrated Evaluation of Relation Between Coronary Lesion Features and Stress Echocardiography Results: The Importance of Coronary Lesion Morphology** *Branko D. Beleslin, Miodrag Ostojic, Ana Djordjevic-Dikic, Rade Babic, Milan Nedeljkovic, Goran Stankovic, Sinisa Stojkovic, Jelena Marinkovic, Ivana Nedeljkovic, Jelena Stepanovic, Jovica Saponjski, Zorica Petrasinovic, Srecko Nedeljkovic, Vladimir Kanjuh*

RISK FACTORS

727 **Associations Between a Polymorphism in the Gene Encoding Glycoprotein IIIa and Myocardial Infarction or Coronary Artery Disease** *Jeffrey L. Anderson, Gretchen J. King, Tami L. Bair, Sidney P. Elmer, Joseph B. Muhlestein, Jessica Habashi, John F. Carlquist*

HEART FAILURE

734 **Incidence, Clinical and Etiologic Features, and Outcomes of Advanced Chronic Heart Failure: The EPICAL Study** *Faiez Zannad, Serge Briancon, Yves Juilliere, Paul-Michel Mertes, Jean-Pierre Villemot, François Alla, Jean-Marc Virion, and the EPICAL Investigators*

743 **Effect of Intensive Therapy for Heart Failure on the Vasodilator Response to Exercise** *Wendy Johnson, Caroline Lucas, Lynne W. Stevenson, Mark A. Creager*

750 **Functional Status and Quality of Life in Patients With Heart Failure Undergoing Coronary Bypass Surgery After Assessment of Myocardial Viability** *Thomas H. Marwick, Charis Zuchowski, Michael S. Lauer, Maria-Anna Secknus, M. John Williams, Bruce W. Lytle*

759 **Cardiac Metaiodobenzylguanidine Uptake in Patients With Moderate Chronic Heart Failure: Relationship With Peak Oxygen Uptake and Prognosis** *Alain Cohen-Solal, Yves Esanu, Damien Logeart, Fabienne Pessione, Claude Dubois, Gilles Dreyfus, René Gourgon, Pascal Merlet*

ELECTROPHYSIOLOGY

767 **Catheter-Induced Mechanical Trauma to Accessory Pathways during Radiofrequency Ablation: Incidence, Predictors and Clinical Implications** *Bernard Belhassen, Sami Viskin, Roman Fish, Aharon Glick, Michael Glikson, Michael Eldar*

775 **A Technique for the Rapid Diagnosis of Atrial Tachycardia in the Electrophysiology Laboratory** *Bradley P. Knight, Adam Zivin, Joseph Souza, Matthew Flemming, Frank Pelosi, Rajiva Goyal, K. Ching Man, S. Adam Strickberger, Fred Morady*

782 **Ventricular Excitation Maps Using Tissue Doppler Acceleration Imaging: Potential Clinical Application** *Li-Xue Yin, Chuen-Mei Li, QinGue Fu, Yiu Lo, QiHua Huang, Li Cai, Zhu-Xui Zheng*

ENDOCARDITIS

788 **A Critical Appraisal of the Quality of the Management of Infective Endocarditis** *François Delahaye, Marie-Odile Rial, Guy de Gevigney, René Ecochard, Jacques Delaye*

794 Editorial Comment **Infective Endocarditis: How Well Are We Managing Our Patients?** *Joseph B. Muhlestein*

VASCULAR BIOLOGY

796 **Abnormal Flow-Mediated Epicardial Vasomotion in Human Coronary Arteries Is Improved by Angiotensin-Converting Enzyme Inhibition: A Potential Role of Bradykinin** *Abhiram Prasad, Syed Husain, Arshed A. Quyyumi*

805 **Endothelium-Dependent Relaxation by Acetylcholine Is Imparied in Hypertriglyceridemic Humans With Normal Levels of Plasma LDL Cholesterol** *Tamara V. Lewis, Anthony M. Dart, Jaye P. F. Chin-Dusting*

PULMONARY HYPERTENSION

813 **Combined Effects of Nitric Oxide and Oxygen During Acute Pulmonary Vasodilator Testing** *Andrew M. Atz, Ian Adatia, James E. Lock, David L. Wessel*

PEDIATRIC CARDIOLOGY

820 **Follow-Up Results of Transvenous Occlusion of Patent Ductus Arteriosus With the Buttoned Device** *P. Syamasundar Rao, Seong Ho Kim, Jae-Young Choi, Christian Rey, Jorge Haddad, Francois Marcon, Kevin Walsh, Eleftherios B. Sideris*

827 **Biventricular Repair Approach in Ducto-Dependent Neonates With Hypoplastic but Morphologically Normal Left Ventricle** *Alain Serraf, Jean Dominique Piot, Nicolas Bonnet, François Lacour-Gayet, Anita Touchot, Jacqueline Bruniaux, Emré Belli, Lorenzo Galletti, Claude Planché*

EXPERIMENTAL STUDIES

835 **Echocardiography-Derived Left Ventricular End-Systolic Regional Wall Stress and Matrix Remodeling After Experimental Myocardial Infarction** *Luis E. Rohde, Masanori Aikawa, George C. Cheng, Galina Sukhova, Scott D. Solomon, Peter Libby, Janice Pfeffer, Marc A. Pfeffer, Richard T. Lee*

843 **Chordal Force Distribution Determines Systolic Mitral Leaflet Configuration and Severity of Functional Mitral Regurgitation** *Sten Lyager Nielsen, Hans Nygaard, Arnold A. Fontaine, J. Michael Hasenkam, Shengqui He, Niels T. Andersen, Ajit P. Yoganathan*

854 **Changes in Porcine Transmitral Flow Velocity Pattern and its Diastolic Determinants During Partial Coronary Occlusion** *Steven B. Solomon, Paolo Barbier, Stanton A. Glantz*

867 **In Vivo Targeting of Acoustically Reflective Liposomes for Intravascular and Transvascular Ultrasonic Enhancement** *Sasha M. Demos, Hayat Alkan-Onyuksel, Bonnie J. Kane, Kishin Ramani, Ashwin Nagaraj, Rodney Greene, Melvin Klegerman, David D. McPherson*

876 **Role of Nitric Oxide in Restenosis After Experimental Balloon Angioplasty in the Hypercholesterolemic Rabbit: Effects on Neointimal Hyperplasia and Vascular Remodeling** *Thierry Le Tourneau, Eric Van Belle, Delphine Corseaux, Benoît Vallet, Gilles Lebuffe, Bernard Dupuis, Jean-Marc Lablanche, Eugène McFadden, Christophe Bauters, Michel E. Bertrand*

NEW METHODS

883 **Improved Accuracy and Precision of Thermodilution Cardiac Output Measurement Using A Dual Thermistor Catheter System** *Kenneth G. Lehmann, Miriam S. Platt*

VIEWPOINT

892 **Salvaging the History, Physical Examination and Doctor-Patient Relationship in a Technological Cardiology Environment** *Denis L. Clement, Jay N. Cohn*

EDITOR'S PAGE

894 **"We Have the Best Doctors and the Most Advanced Technology"—Advertising in Medicine** *William W. Parmley*

SPECIAL SECTIONS

ACC News

895 **President's Page: Evaluation and Management**

Documentation Guidelines: Proving Accountability or Just Increasing Hassle? *Spencer B. King III*

897 **LETTERS TO THE EDITOR**

MARCH 15, 1999 VOLUME 33 NUMBER 4

50TH ANNIVERSARY HISTORICAL ARTICLE

905 **Congenital Heart Disease** *Mary Allen Engle*

CLINICAL STUDIES

RISK FACTOR REDUCTION

909 **The Effects of Pravastatin on Hospital Admission in Hypercholesterolemic Middle-Aged Men: West of Scotland Coronary Prevention Study** *West of Scotland Coronary Prevention Study Group*

HEART FAILURE

916 **Beta-Adrenergic Blocking Agent Use and Mortality in Patients With Asymptomatic and Symptomatic Left Ventricular Systolic Dysfunction: A Post Hoc Analysis of the Studies of Left Ventricular Dysfunction** *Derek V. Exner, Daniel L. Dries, Myron A. Waclawiw, Brent Shelton, Michael J. Domanski*

924 **Tolerability and Efficacy of Carvedilol in Patients With New York Heart Association Class IV Heart Failure** *Peter S. Macdonald, Anne M. Keogh, Christina L. Aboyoun, Mayanna Lund, Raul Amor, Dermot J. McCaffrey*

932 **Endothelin$_B$ Receptors Are Functionally Important in Mediating Vasoconstriction in the Systemic Circulation in Patients With Left Ventricular Systolic Dysfunction** *Peter J. Cowburn, John G. F. Cleland, John D. McArthur, Margaret R. MacLean, John J. V. McMurray, Henry J. Dargie, James J. Morton*

939 Editorial Comment **Endothelin, the Bad Actor in the Play: A Marker or Mediator of Cardiovascular Disease** *Prakash C. Deedwania*

943 **Use of Cardiopulmonary Exercise Testing With Hemodynamic Monitoring in the Prognostic Assessment of Ambulatory Patients With Chronic Heart Failure** *Marco Metra, Pompilio Faggiano, Antonio D'Aloia, Savina Nodari, Anna Gualeni, Domenica Raccagni, Livio Dei Cas*

951 **Independent Prognostic Information Provided by Sphygmomanometrically Determined Pulse Pressure and Mean Arterial Pressure in Patients With Left Ventricular Dysfunction** *Michael J. Domanski, Gary F. Mitchell, James E. Norman, Derek V. Exner, Bertram Pitt, Marc A. Pfeffer*

959 **Apoptosis in Skeletal Myocytes of Patients With Chronic Heart Failure Is Associated With Exercise Intolerance** *Volker Adams, Hong Jiang, Jiangtao Yu, Sven Möbius-Winkler, Eduard Fiehn, Axel Linke, Claudia Weigl, Gerhard Schuler, Rainer Hambrecht*

ELECTROPHYSIOLOGY

966 **Amiodarone Versus Propafenone for Conversion of Chronic Atrial Fibrillation: Results of a Randomized, Controlled Study** *George E. Kochiadakis, Nikos E. Igoumenidis, Fragiskos I. Parthenakis, Gregory I. Chlouverakis, Panos E. Vardas*

972 **The Creation of Linear Contiguous Lesions in the Atria With an Expandable Loop Catheter** *Boaz Avitall, Ray W. Helms, Joseph B. Koblish, Wayne Sieben, Alexey V. Kotov, Gopal N. Gupta*

985 **Utility of a Single-Stage Isoproterenol Tilt Table Test in Adults: A Randomized Comparison With Passive Head-Up Tilt** *Win-Kuang Shen, Arshad Jahangir, Douglas Beinborn, Christine M. Lohse, David O. Hodge, Robert F. Rea, Stephen C. Hammill*

LEFT VENTRICULAR FUNCTION

991 **Assessment of Regional and Global Left Ventricular Function by Reinjection Tl-201 and Rest Tc-99m Sestamibi ECG-Gated SPECT: Comparison With Three-Dimensional Magnetic Resonance Imaging** *Eiji Tadamura, Takashi Kudoh, Makoto Motooka, Masayuki Inubushi, Seiji Shirakawa, Naoya Hattori, Tomohisa Okada, Tetsuya Matsuda, Takaaki Koshiji, Kazunobu Nishimura, Katsuhiko Matsuda, Junji Konishi*

INTERVENTIONAL CARDIOLOGY

998 **Influence of a Platelet GPIIb/IIIa Receptor Antagonist on Myocardial Hypoperfusion During Rotational Atherectomy as Assessed by Myocardial Tc-99m Sestamibi Scintigraphy** *Karl-Christian Koch, Juergen vom Dahl, Eduard Kleinhans, Heinrich G. Klues, Peter W. Radke, Susanne Ninnemann, Gernot Schulz, Udalrich Buell, Peter Hanrath*

1005 **Lipoprotein(a) and Coronary Thrombosis and Restenosis After Stent Placement** *Anne Wehinger, Adnan Kastrati, Shpend Elezi, Hannsjörg Baum, Siegmund Braun, Franz-Josef Neumann, Albert Schömig*

CORONARY ARTERY DISEASE

1013 **Association of Lipoprotein Lipase Gene Polymorphisms With Coronary Artery Disease** *Jeffrey L. Anderson, Gretchen J. King, Tami L. Bair, Sidney P. Elmer, Joseph B. Muhlestein, Jessica Habashi, Lori Mixson, John F. Carlquist*

TRANSMYOCARDIAL REVASCULARIZATION

1021 **Perioperative Morbidity and Morality After Transmyocardial Laser Revascularization: Incidence and Risk Factors for Adverse Events** *G. Chad Hughes, Kevin P. Landolfo, James E. Lowe, Robin B. Coleman, Carolyn L. Donovan*

MYOCARDIAL ISCHEMIA

1027 **Is the Development of Myocardial Tolerance to Repeated Ischemia in Humans Due to Preconditioning or to Collateral Recruitment?** *Michael Billinger, Martin Flesch, Franz R. Eberli, Ali Garachemani, Bernhard Meier, Christian Seiler*

1036 Editorial Comment **Percutaneous Transluminal Coronary Angioplasty as a Model of Ischemic Preconditioning and Preconditioning-mimetic Drugs** *Yochai Birnbaum, Robert A. Kloner*

MYOCARDIAL INFARCTION

1040 **Feasibility of Direct Discharge From the Coronary/ Intermediate Care Unit After Acute Myocardial Infarction** *Manohara P. J. Senaratne, Marleen E. Irwin, Selma Shaben, Jo Griffiths, Jayan Nagendran, Leslie Kasza, Sajad Gulamhusein, Maureen Haughian*

1047 Editorial Comment **Early Discharge After Acute Myocardial Infarction: Who and When?** *Alan D. Guerci*

ENDOTHELIAL FUNCTION

1050 **Impaired Endothelial Function Following a Meal Rich in Used Cooking Fat** *Michael J. A. Williams, Wayne H. F. Sutherland, Maree P. McCormick, Sylvia A. de Jong, Robert J. Walker, Gerard T. Wilkins*

SYNDROME X

1056 **Enhanced Exercise-Induced Hyperkalemia in Patients With Syndrome X** *Hans Erik Bøtker, Helle Sauer Sonne, Ole Frøbert, Frederik Andreasen*

EXPERIMENTAL STUDY

1062 **Effects of Endotoxin on Human Myocardial Contractility Involvement of Nitric Oxide and Peroxynitrite** *Markus Flesch, Heiko Kilter, Bodo Cremers, Ulrich Laufs, Michael Südkamp, Monika Ortmann, Frank U. Müller, Michael Böhm*

PERSPECTIVE

1071 **Perspectives on the Role of New Treatment Strategies in Hypertrophic Obstructive Cardiomyopathy** *Paolo Spirito, Barry J. Maron*

SPECIAL SECTIONS

ACC Expert Consensus Document

1076 **ACC Expert Consensus Document on Ethical Coding and Billing Practices for Cardiovascular Medicine Specialists** *James C. Blankenship, Chair*

ACC News

1087 **Newly Elected Members of the College**

APRIL 1999 VOLUME 33 NUMBER 5

BETHESDA CONFERENCE REPORT

1091 **30th Bethesda Conference: The Future of Academic Cardiology (1998)** *Kenneth Lee Baughman, Conference Co-Chair, Michael H. Crawford, Conference Co-Chair*

50TH ANNIVERSARY HISTORICAL ARTICLE

1136 **The Framingham Offspring Study: A Commentary** *H. J. C. Swan*

REVIEW ARTICLES

1141 **A View From the Millennium: The Practice of Cardiology Circa 1950 and Thereafter** *Mark E. Silverman*

1152 **Drug-Induced Heart Failure** *Johannes Feenstra, Diederick E. Grobbee, Willem. J. Remme, Bruno H.Ch. Stricker*

1163 **Recent Insight Into Therapy of Congestive Heart Failure: Focus on ACE Inhibition and Angiotensin-II Antagonism** *Hans Peter Brunner-La Rocca, Gautam Vaddadi, Murray D. Esler*

CLINICAL STUDIES

HEART FAILURE

1174 **Dose-related Beneficial Long-term Hemodynamic and Clinical Efficacy of Irbesartan in Heart Failure** *Edward P. Havranek, Ignatius Thomas, William B. Smith, George A. Ponce, Martin Bilsker, Mark A. Munger, Robert A. Wolf for the Irbesartan Heart Failure Group*

1182 **Left Ventricular Systolic and Diastolic Function After Pericardiectomy in Patients With Constrictive Pericarditis: Doppler Echocardiographic Findings and Correlation With Clinical Status** *Michele Senni, Margaret M. Redfield, Lieng H. Ling, Gordon K. Danielson, A. Jamil Tajik, Jae K. Oh*

1189 **Mortality Remains High for Outpatient Transplant Candidates With Prolonged (>6 Months) Waiting List Time** *Keith D. Aaronson, Donna M. Mancini*

1196 **Cerebral Metabolic Abnormalities in Congestive Heart Failure Detected by Proton Magnetic Resonance Spectroscopy** *Cheol Whan Lee, Jung-Hee Lee, Jae-Joong Kim, Seong-Wook Park, Myeong-Ki Hong, Sang-Tae Kim, Tae-Hwan Lim, Seung-Jung Park*

1203 **Prognostic Value of Heart Rate Variability for Sudden Death and Major Arrhythmic Events in Patients With Idiopathic Dilated Cardiomyopathy** *Laurent Fauchier, Dominique Babuty, Pierre Cosnay, Jean Paul Fauchier*

ELECTROPHYSIOLOGY

1208 **Relation Between Mode of Pacing and Long-Term Survival in the Very Elderly** *Arshad Jahangir, Win-Kuang Shen, Sharon A. Neubauer, David J. Ballard, Stephen C. Hammill, David O. Hodge, Christine M. Lohse, Bernard J. Gersh, David L. Hayes*

1217 **Defibrillation-Guided Radiofrequency Ablation of Atrial Fibrillation Secondary to an Atrial Focus** *Chu-Pak Lau, Hung-Fat Tse, Gregory M. Ayers*

1227 **Effects of Paroxetine Hydrochloride, a Selective Serotonin Reuptake Inhibitor, on Refractory Vasovagal**

Syncope: A Randomized, Double-blind, Placebo-controlled Study *Enrico Di Girolamo, Cesare Di Iorio, Panfilo Sabatini, Luigi Leonzio, Carmela Barbone, Antonio Barsotti*

1231 **Down-Regulation of L-Type Calcium Channel and Sarcoplasmic Reticular Ca^{2+}-ATPase mRNA in Human Atrial Fibrillation Without Significant Change in the mRNA of Ryanodine Receptor, Calsequestrin and Phospholamban: An Insight Into the Mechanism of Atrial Electrical Remodelin** *Ling-Ping Lai, Ming-Jai Su, Jiunn-Lee Lin, Fang-Yue Lin, Chang-Her Tsai, Yih-Sharng Chen, Shoei K. Stephen Huang, Yung-Zu Tseng, Wen-Pin Lien*

INTERVENTIONAL CARDIOLOGY

1238 **Percutaneous Revascularization of Atherosclerotic Obstruction of Aortic Arch Vessels** *Peter Hadjipetrou, Stephen Cox, Thomas Piemonte, Andrew Eisenhauer*

1246 Editorial Comment **The Times They Are A-Changin' . . .** *Christopher J. White*

1248 **Antithrombin Activity During the Period of Percutaneous Coronary Revascularization: Relation to Heparin Use, Thrombotic Complications and Restenosis** *William H. Matthai, Jr., Peter B. Kurnik, William C. Groh, William J. Untereker, Jamie E. Siegel*

1257 **Primary Angioplasty for the Treatment of Acute Myocardial Infarction: Experience at Two Community Hospitals Without Cardiac Surgery** *Thomas P. Wharton, Jr., Nancy Sinclair McNamara, Frank A. Fedele, Mark I. Jacobs, Alan R. Gladstone, Erik J. Funk*

1266 Editorial Comment **Guidelines for Surgical Standby for Coronary Angioplasty: Should They be Changed?** *Paolo Angelini*

1269 **The Importance of Proteinuria as a Determinant of Mortality Following Percutaneous Coronary Revascularization in Diabetics** *Steven P. Marso, Stephen G. Ellis, E. Murat Tuzcu, Patrick L. Whitlow, Irving Franco, Russell E. Raymond, Eric J. Topol*

1278 **Comparing Physician-Specific Two-Year Patient Outcomes After Coronary Angiography: Methodologic Issues and Results** *Stephen G. Ellis, Dave Miller, Thomas F. Keys, Kimberly Brown, Renee Ellert, Georgiana Howell, A. Michael Lincoff, Eric J. Topol*

HYPERCHOLESTEROLEMIA

1286 **Inhibition of Thrombin Generation by Simvastatin and Lack of Additive Effects of Aspirin in Patients With Marked Hypercholesterolemia** *Andrzej Szczeklik, Jacek Musiał, Anetta Undas, Piotr Gajewski, Paweł Góra, Jakub Swadźba, Miłosz Jankowski*

1294 **Pravastatin Therapy in Hyperlipidemia: Effects on Thrombus Formation and the Systemic Hemostatic Profile** *George Dangas, Juan J. Badimon, Donald A. Smith, Allen H. Unger, Daniel Levine, John H. Shao, Perwaiz Meraj, Carl Fier, John T. Fallon, John A. Ambrose*

1305 Editorial Comment **The Anti-Thrombotic Effects of Statins** *Dermot Kearney, Desmond Fitzgerald*

ATHEROSCLEROSIS

1308 **Atherosclerosis of the Ascending Aorta Is an Independent Predictor of Long-Term Neurologic Events and Mortality** *Víctor G. Dávila-Román, Suzan F. Murphy, Nancy J. Nickerson, Nicholas T. Kouchoukos, Kenneth B. Schechtman, Benico Barzilai*

1317 **Atherosclerosis of the Thoracic Aorta and Aortic Debris as a Marker of Poor Prognosis: Benefit of Oral Anticoagulants** *Emile Ferrari, Renaud Vidal, Thierry Chevallier, Marcel Baudouy*

CORONARY ARTERY DISEASE

1323 **Comparison of Pulmonary Uptake With Transient Cavity Dilation After Exercise Thallium-201 Perfusion Imaging** *Christopher L. Hansen, Renee Sangrigoli, Emeke Nkadi, Matt Kramer*

CORONARY BLOOD FLOW

1328 **Blood Flow–Metabolism Imaging With Positron Emission Tomography in Patients With Diabetes Mellitus for the Assessment of Reversible Left Ventricular Contractile Dysfunction** *Heiko Schöder, Roxana Campisi, Tohru Ohtake, Carl K. Hoh, Dae H. Moon, Johannes Czernin, Heinrich R. Schelbert*

1338 **Phasic Coronary Flow Pattern and Flow Reserve in Patients With Left Bundle Branch Block and Normal Coronary Arteries** *Emmanuel I. Skalidis, George E. Kochiadakis, Sophia I. Koukouraki, Fragiskos I. Parthenakis, Nikolaos S. Karkavitsas, Panos E. Vardas*

MYOCARDIAL INFARCTION

1347 **A Prospective Study of Fibrinogen and Risk of Myocardial Infarction in the Physicians' Health Study** *Jing Ma, Charles H. Hennekens, Paul M. Ridker, Meir J. Stampfer*

1353 **Geometric Features of Coronary Artery Lesions Favoring Acute Occlusion and Myocardial Infarction: A Quantitative Angiographic Study** *Francois Ledru, Pierre Théroux, Jacques Lespérance, Jean Laurier, Pierre Ducimetière, Jean-Léon Guermonprez, Benoit Diébold, Didier Blanchard*

1362 Editorial Comment **The Shadows Leave a Doubt—The Angiography Recognition of Vulnerable Coronary Artery Plaques** *William C. Little, Robert J. Applegate*

ENDOCARDITIS

1365 **The Presence of Infection-Related Antiphospholipid Antibodies in Infective Endocarditis Determines a Major Risk Factor for Embolic Events** *Leon Iri Kupferwasser, Gerd Hafner, Susanne Mohr-Kahaly, Raimund Erbel, Jürgen Meyer, Harald Darius*

DIABETES

1372 **Maternally Transmitted Susceptibility to Non–Insulin-Dependent Diabetes Mellitus and Left Ventricular Hypertrophy** *Yukihiko Momiyama, Yoshihiko Suzuki, Fumitaka Ohsuzu, Yoshihito Atsumi, Kempei Matsuoka, Mitsuru Kimura*

ENDOTHELIAL FUNCTION

1379 **Exercise Training Enhances Endothelial Function in Young Men** *Peter Clarkson, Hugh E. Montgomery, Michael J. Mullen, Ann E. Donald, Amanda J. Powe, Teresa Bull, Michael Jubb, Michael World, John E. Deanfield*

NEW METHODS

1386 **A Myocardial Perfusion Reserve Index in Humans Using First-Pass Contrast-Enhanced Magnetic Resonance Imaging** *J. H. S. Cullen, M. A. Horsfield, C. R. Reek, G. R. Cherryman, D. B. Barnett, N. J. Samani*

PEDIATRIC CARDIOLOGY

1395 **Transcatheter Closure of Muscular Ventricular Septal Defects With the Amplatzer Ventricular Septal Defect Occluder: Initial Clinical Applications in Children** *Basil (Vasilios) D. Thanopoulos, George S. Tsaousis, Georgia N. Konstadopoulou, Armine G. Zarayelyan*

EXPERIMENTAL STUDIES

1400 **Pimobendan Inhibits the Production of Proinflammatory Cytokines and Gene Expression of Inducible Nitric Oxide Synthase in a Murine Model of Viral Myocarditis** *Atsushi Iwasaki, Akira Matsumori, Takehiko Yamada, Tetsuo Shioi, Weizhong Wang, Koh Ono, Ryosuke Nishio, Masaharu Okada, Shigetake Sasayama*

1408 **The Potent Platelet Inhibitory Effects of S-Nitrosated Albumin Coating of Artificial Surfaces** *Nabil Maalej, Ralph Albrecht, Joseph Loscalzo, John D. Folts*

1415 **Mechanism of Arrhythmogenicity of the Short–Long Cardiac Sequence That Precedes Ventricular Tachyarrhythmias in the Long QT Syndrome** *Nabil El-Sherif, Edward B. Caref, Masaomi Chinushi, Mark Restivo*

PERSPECTIVE

1424 **Does Heart Failure Confer a Hypercoagulable State? Virchow's Triad Revisited** *Gregory Y. H. Lip, Christopher R. Gibbs*

EDITORIAL

1427 **International Cooperation in World Cardiology: The Role of the World Heart Federation** *A Bayés de Luna*

EDITOR'S PAGE

1431 **Integrity—an Outmoded Concept?** *William W. Parmley*

ACC News

1432 **President's Page: Convocation Address** *Arthur Garson Jr.*

MAY 1999 VOLUME 33 NUMBER 6

50TH ANNIVERSARY HISTORICAL ARTICLE

1435 **Surgical Treatment of Acute Myocardial Infarction** *Réne G. Favaloro*

REVIEW ARTICLE

1442 **Racial Heterogeneity in Coronary Artery Vasomotor Reactivity: Differences Between Japanese and Caucasian Patients** *John F. Beltrame, Shigetake Sasayama, Attilio Maseri*

CLINICAL STUDIES

MYOCARDIAL ISCHEMIA

1453 **The Women's Ischemia Syndrome Evaluation (WISE) Study: Protocol Design, Methodology and Feasibility Report** *C. Noel Bairey Merz, Sheryl F. Kelsey, Carl J. Pepine, Nathaniel Reichek, Steven E. Reis, William J. Rogers, Barry L. Sharaf, George Sopko, for the WISE Study Group*

1462 **Dobutamine Stress Echocardiography in Women With Chest Pain. Pilot Phase Data from the National Heart, Lung and Blood Institute Women's Ischemia Syndrome Evaluation (WISE)** *Jannet F. Lewis, Lang Lin, Susan McGorray, Carl J. Pepine, Mark Doyle, Daniel Edmundowicz, Richard Holubkov, Gerald Pohost, Nathaniel Reichek, William Rogers, Barry L. Sharaf, George Sopko, C. Noel Bairey Merz*

1469 **Coronary Flow Velocity Response to Adenosine Characterizes Coronary Microvascular Function in Women With Chest Pain and No Obstructive Coronary Disease: Results From the Pilot Phase of the Women's Ischemia Syndrome Evaluation (WISE) Study** *Steven E. Reis, Richard Holubkov, Joon S. Lee, Barry Sharaf, Nathaniel Reichek, William J. Rogers, Edward G. Walsh, Anthon R. Fuisz, Richard Kerensky, Katherine M. Detre, George Sopko, Carl J. Pepine, for the WISE Investigators*

1476 **Relationship Among Mental Stress–Induced Ischemia and Ischemia During Daily Life and During Exercise: The Psychophysiologic Investigations of Myocardial Ischemia (PIMI) Study** *Peter H. Stone, David S. Krantz, Robert P. McMahon, A. David Goldberg, Lewis C. Becker, Bernard R. Chaitman, Herman A. Taylor, Jerome D. Cohen, Kenneth E. Freedland, Barry D. Bertolet, Cecil Coughlan, Carl J. Pepine, Peter G. Kaufmann, David S. Sheps, for the PIMI Study Group*

1485 **Supine Bicycle Versus Post–Treadmill Exercise Echocardiography in the Detection of Myocardial Ischemia: A Randomized Single-Blind Crossover Trial** *Shamim M. Badruddin, Anwar Ahmad, Judith Mickelson, John Abukhalil, William L. Winters, Sherif F. Nagueh, William A. Zoghbi*

1491 **Parental History of Premature Coronary Heart Disease Mortality and Signs of Ischemia on the Resting Electrocardiogram** *Dirk De Bacquer, Guy De Backer, Marcel Kornitzer, Henry Blackburn*

ENDOTHELIAL FUNCTION

1499 **Alpha-Adrenoceptor Blockade Prevents Exercise-Induced Vasoconstriction of Stenotic Coronary Arteries** *Barbara K. Julius, Giuseppe Vassalli, Lazar Mandinov, Otto M. Hess*

1506 **Improvement in Endothelial Function by Angiotensin-converting Enzyme Inhibition in Non–Insulin-dependent Diabetes Mellitus** *Gerard O'Driscoll, Daniel Green, Andrew Maiorana, Kim Stanton, Frances Colreavy, Roger Taylor*

1512 **Improvement of Endothelial Vasomotor Dysfunction by Treatment With Alpha-Tocopherol in Patients With High Remnant Lipoproteins Levels** *Kiyotaka Kugiyama, Takeshi Motoyama, Hideki Doi, Hiroaki*

Kawano, Nobutaka Hirai, Hirofumi Soejima, Yuji Miyao, Keiji Takazoe, Yasushi Moriyama, Yuji Mizuno, Ryusuke Tsunoda, Hisao Ogawa, Tomohiro Sakamoto, Seigo Sugiyama, Hirofumi Yasue

ACUTE CORONARY SYNDROMES

1519 **Admission Risk Assessment by Cardiac Troponin T in Unstable Coronary Artery Disease: Additional Prognostic Information From Continuous ST Segment Monitoring** *Bjarne L. Nørgaard, Karl Andersen, Mikael Dellborg, Putte Abrahamsson, Jan Ravkilde, Kristian Thygesen, for the TRIM study group*

MYOCARDIAL INFARCTION

1528 **Abciximab in the Treatment of Acute Myocardial Infarction Eligible for Primary Percutaneous Transluminal Coronary Angioplasty: Results of the Glycoprotein Receptor Antagonist Patency Evaluation (GRAPE) Pilot Study** *Lambert F. M. van den Merkhof, Felix Zijlstra, Hans Olsson, Lars Grip, Gerrit Veen, Frits W. H. M. Bär, Marcel J. B. M. van den Brand, Maarten L. Simoons, Freek W. A. Verheugt*

1533 **A Two-Decades (1975 to 1995) Long Experience in the Incidence, In-Hospital and Long-Term Case–Fatality Rates of Acute Myocardial Infarction: A Community-Wide Perspective** *Robert J. Goldberg, Jorge Yarzebski, Darleen Lessard, Joel M. Gore*

1540 Editorial Comment **We Have Journeyed Far** *Ileana L. Piña*

1543 **Prognostic Significance of Elevated Hemostatic Markers in Patients With Acute Myocardial Infarction** *Yi-Heng Li, Jeng-Kai Teng, Wei-Chuan Tsai, Liang-Miin Tsai, Li-Jen Lin, How-Ran Guo, Jyh-Hong Chen*

HEART FAILURE

1549 **Lack of Effect of Coenzyme Q on Left Ventricular Function in Patients With Congestive Heart Failure** *Paul S. Watson, Gregory M. Scalia, Andrew Galbraith, Darryl J. Burstow, Nicholas Bett, Constantine N. Aroney*

1553 **Antiadrenergic Effect of Chronic Amiodarone Therapy in Human Heart Failure** *David M. Kaye, Anthony M. Dart, Garry L. Jennings, Murray D. Esler*

1560 **Prediction of Hospital Readmission for Heart Failure: Development of a Simple Risk Score Based on Administrative Data** *Edward F. Philbin, Thomas G. DiSalvo*

DIASTOLIC DYSFUNCTION

1567 **Losartan Improves Exercise Tolerance in Patients With Diastolic Dysfunction and a Hypertensive Response to Exercise** *James G. Warner, Jr., D. Christopher Metzger, Dalane W. Kitzman, Deborah J. Wesley, William C. Little*

HEART TRANSPLANT

1573 **Low Incidence of Transplant Coronary Artery Disease in Chinese Heart Recipients** *Ron-Bin Hsu, Shu-Hsun Chu, Shoei-Shen Wang, Wen-Je Ko, Nai-Kuan Chou, Chii-Ming Lee, Ming-Fong Chen, Yuan-Teh Lee*

DILATED CARDIOMYOPATHY

1578 **Marked Elevation of Myocardial Trace Elements in Idiopathic Dilated Cardiomyopathy Compared With Secondary Cardiac Dysfunction** *Andrea Frustaci, Nicola Magnavita, Cristina Chimenti, Marina Caldarulo, Enrico Sabbioni, Romano Pietra, Carlo Cellini, Gian Federico Possati, Attilio Maseri*

CARDIOMYOPATHY

1584 **Maternally Inherited Cardiomyopathy: Clinical and Molecular Characterization of a Large Kindred Harboring the A4300G Point Mutation in Mitochondrial Deoxyribonucleic Acid** *Carlo Casali, Giulia d'Amati, Paola Bernucci, Luciano DeBiase, Camillo Autore, Filippo M. Santorelli, Domenico Coviello, Pietro Gallo*

HYPERTROPHIC CARDIOMYOPATHY

1590 **Clinical Profile of Hypertrophic Cardiomyopathy Identified De Novo in Rural Communities** *Barry J. Maron, Robert Mathenge, Susan A. Casey, Liviu C. Poliac, Terrence F. Longe*

1596 **Survival After Cardiac Arrest or Sustained Ventricular Tachycardia in Patients With Hypertrophic Cardiomyopathy** *Perry M. Elliott, Sanjay Sharma, Amanda Varnava, Jan Poloniecki, Edward Rowland, William J. McKenna*

EXERCISE

1602 **Verapamil Acutely Reduces Ventricular-Vascular Stiffening and Improves Aerobic Exercise Performance in Elderly Individuals** *Chen-Huan Chen, Masaru Nakayama, Maurice Talbot, Erez Nevo, Barry Fetics, Gary Gerstenblith, Lewis C. Becker, David A. Kass*

INTERVENTIONAL CARDIOLOGY

1610 **Acute and Long-term Cost Implications of Coronary Stenting** *Eric D. Peterson, Patricia A. Cowper, Elizabeth R. DeLong, James P. Zidar, Richard S. Stack, Daniel B. Mark*

1619 **n-3 Fatty Acids Do Not Prevent Restenosis After Coronary Angioplasty: Results From the CART Study** *Odd Johansen, Magne Brekke, Ingebjørg Seljeflot, Michael Abdelnoor, Harald Arnesen*

1627 **Is a Strategy of Intended Incomplete Percutaneous Transluminal Coronary Angioplasty Revascularization Acceptable in Nondiabetic Patients Who Are Candidates for Coronary Artery Bypass Graft Surgery? The Bypass Angioplasty Revascularization Investigation (BARI)** *Martial G. Bourassa, Kevin E. Kip, Alice K. Jacobs, Robert H. Jones, George Sopko, Allan D. Rosen, Barry L. Sharaf, Leonard Schwartz, Bernard R. Chaitman, Edwin L. Alderman, David R. Holmes, Gary S. Roubin, Katherine M. Detre, Robert L. Frye, for the BARI Investigators*

VALVE DISEASE

1637 **Dose-Dependent Fetal Complications of Warfarin in Pregnant Women With Mechanical Heart Valves** *Nicola Vitale, Marisa De Feo, Luca Salvatore De Santo, Alessio Pollice, Nicola Tedesco, Maurizio Cotrufo*

1642 Editorial Comment **Pregnancy Through a Prosthetic Heart Valve** *Uri Elkayam*

1646 **Three-Dimensional Color Doppler: A Clinical Study in Patients With Mitral Regurgitation** *Raffaele De Simone, Gerald Glombitza, Christian Friedrich Vahl, Jörg Albers, Hans Peter Meinzer, Siegfried Hagl*

1655 **"Overestimation" of Catheter Gradients by Doppler Ultrasound in Patients With Aortic Stenosis: A Predictable Manifestation of Pressure Recovery**

Helmut Baumgartner, Thomas Stefenelli, Julia Niederberger, Heinrich Schima, Gerald Maurer

1662 **Range of Tricuspid Regurgitation Velocity at Rest and During Exercise in Normal Adult Men: Implications for the Diagnosis of Pulmonary Hypertension** *Eduardo Bossone, Melvyn Rubenfire, David S. Bach, Mark Ricciardi, William F. Armstrong*

ELECTROPHYSIOLOGY

1667 **Narrowing of the Superior Vena Cava–Right Atrium Junction During Radiofrequency Catheter Ablation for Inappropriate Sinus Tachycardia: Analysis With Intracardiac Echocardiography** *David J. Callans, Jian-Fang Ren, David Schwartzman, Charles D. Gottlieb, Farooq A. Chaudhry, Francis E. Marchlinski*

1671 **Pacemaker Lead Extraction With the Laser Sheath: Results of the Pacing Lead Extraction With the Excimer Sheath (PLEXES) Trial** *Bruce L. Wilkoff, Charles L. Byrd, Charles J. Love, David L. Hayes, T. Duncan Sellers, Raymond Schaerf, Victor Parsonnet, Laurence M. Epstein, Robert A. Sorrentino, Christopher Reiser*

HYPERTENSION

1677 **Adenosine Causes the Release of Active Renin and Angiotensin II in the Coronary Circulation of Patients With Essential Hypertension** *Agostino Virdis, Lorenzo Ghiadoni, Mario Marzilli, Enrico Orsini, Stefania Favilla, Piero Duranti, Stefano Taddei, Paolo Marraccini, Antonio Salvetti*

LEFT VENTRICULAR HYPERTROPHY

1685 **Familial Predisposition of Left Ventricular Hypertrophy** *Heribert Schunkert, Ulrich Bröckel, Christian Hengstenberg, Andreas Luchner, Michael W. Muscholl, Klaus Kurdizim, Bernard Kuch, Angela Döring, Günter A. J. Riegger, Hans-Werner Hense*

ADULT CONGENITAL HEART DISEASE

1692 **Pregnancy Among Women With Congenitally Corrected Transposition of Great Arteries** *Heidi M. Connolly, Martha Grogan, Carole A. Warnes*

PEDIATRIC CARDIOLOGY

1696 **Accuracy of Prenatal Echocardiographic Diagnosis and Prognosis of Fetuses With Conotruncal Anomalies** *Andrew J. P. Tometzki, Kenji Suda, Thomas Kohl, John P. Kovalchin, Norman H. Silverman*

1702 **Evolution of Risk Factors Influencing Early Mortality of the Arterial Switch Operation** *Elizabeth D. Blume, Karen Altmann, John E. Mayer, Steven D. Colan, Kimberlee Gauvreau, Tal Geva*

1710 **The Snare-Assisted Technique for Transcatheter Coil Occlusion of Moderate to Large Patent Ductus Arteriosus: Immediate and Intermediate Results** *Frank F. Ing, Robert J. Sommer*

1719 **Troponin-I for Prediction of Early Postoperative Course After Pediatric Cardiac Surgery** *Franz F. Immer, Franco Stocker, Andrea M. Seiler, Jean-Pierre Pfammatter, Denis Bachmann, Gert Printzen, Thierry Carrel*

EXPERIMENTAL STUDIES

1724 **Volume Overload Hypertrophy of the Newborn Heart Slows the Maturation of Enzymes Involved in the Regulation of Fatty Acid Metabolism** *Paul F. Kantor, Murray A. Robertson, James Y. Coe, Gary D. Lopaschuk*

1735 **Mapping of Regional Myocardial Strain and Work During Ventricular Pacing: Experimental Study Using Magnetic Resonance Imaging Tagging** *Frits W. Prinzen, William C. Hunter, Bradley T. Wyman, Elliot R. McVeigh*

EDITOR'S PAGE

1743 **Training Programs in Interventional Cardiology** *William W. Parmley*

SPECIAL SECTIONS

ACC News

1744 **President's Page: Personalizing Continuing Medical Education** *Arthur A. Garson, Jr.*

1746 **LETTERS TO THE EDITOR**

1750 **CORRECTIONS**

AHA/ACC Scientific Statement: Consensus Panel Statement

1751 **Guide to Preventive Cardiology for Women** *Lori Mosca, Chair*

ACC/AHA Practice Guidelines

1756 **ACC/AHA Guidelines for Coronary Angiography: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Coronary Angiography)** *Patrick J. Scanlon, Co-Chair, David P. Faxon, Co-Chair*

1825 **1999–2000 Board of Governors**

JUNE 1999 VOLUME 33 NUMBER 7

50TH ANNIVERSARY HISTORICAL ARTICLE

1829 **Thrombolytic Therapy in Acute Myocardial Infarction** *J. Ward Kennedy*

CLINICAL STUDIES

MYOCARDIAL ISCHEMIA

1833 **The Multicenter Study of Enhanced External Counterpulsation (MUST-EECP): Effect of EECP**

on Exercise-Induced Myocardial Ischemia and Anginal Episodes *Rohit R. Arora, Tony M. Chou, Diwakar Jain, Bruce Fleishman, Lawrence Crawford, Thomas McKiernan, Richard W. Nesto*

1841 Editorial Comment **EECP-Enhanced External Counterpulsation** *C. Richard Conti*

1843 **Immediate Exercise Testing of Low Risk Patients With Known Coronary Artery Disease Presenting to the Emergency Department With Chest Pain** *William R. Lewis, Ezra A. Amsterdam, Samuel Turnipseed, J. Douglas Kirk*

1848 **Myocardial Viability on Echocardiography Predicts Long-Term Survival After Revascularization in Patients With Ischemic Congestive Heart Failure** *Roxy Senior, Sanjiv Kaul, Avijit Lahiri*

1855 **Low Hot Pain Threshold Predicts Shorter Time to Exercise-Induced Angina: Results From the Psychophysiological Investigations of Myocardial Ischemia (PIMI) Study** *David S. Sheps, Robert P. McMahon, Kathleen C. Light, William Maixner, Carl J. Pepine, Jerome D. Cohen, A. David Goldberg, Robert Bonsall, Robert Carney, Peter H. Stone, David Sheffield, Peter G. Kaufmann, and the PIMI Investigators*

1863 **Effects of Naloxone on Myocardial Ischemic Preconditioning in Humans** *Fabrizio Tomai, Filippo Crea, Achille Gaspardone, Francesco Versaci, Anna S. Ghini, Claudio Ferri, Giovambattista Desideri, Luigi Chiariello, Pier A. Gioffrè*

1870 **Clinical Validation of Intravascular Ultrasound Imaging for Assessment of Coronary Stenosis Severity: Comparison With Stress Myocardial Perfusion Imaging** *Toshihiko Nishioka, Aman M. Amanullah, Huai Luo, Hans Berglund, Chong-Jin Kim, Tomoo Nagai, Naohiro Hakamata, Shuichi Katsushika, Akimi Uehata, Bonpei Takase, Kazushige Isojima, Daniel S. Berman, Robert J. Siegel*

MYOCARDIAL INFARCTION

1879 **A Multicenter, Randomized Study of Argatroban Versus Heparin as Adjunct to Tissue Plasminogen Activator (TPA) in Acute Myocardial Infarction: Myocardial Infarction With Novastan and TPA (MINT) Study** *Ik-Kyung Jang, David F. M. Brown, Robert P. Giugliano, H. Vernon Anderson, Douglas Losordo, Jose C. Nicolau, Oscar P. Dutra, Oscar Bazzino, Victor Molina Viamonte, Roberto Norbady, Alvaro Sosa Liprandi, Thomas J. Massey, Robert Dinsmore, Richard P. Schwarz, Jr., and the MINT Investigators*

1886 **A Comparison of the National Registry of Myocardial Infarction 2 With the Cooperative Cardiovascular Project** *Nathan R. Every, Paul D. Frederick, Michael Robinson, Jonathan Sugarman, Laura Bowlby, Hal V. Barron*

1895 **Prevalence, Characteristics and Prognostic Value During Long-Term Follow-up of Nonsustained Ventricular Tachycardia After Myocardial Infarction in the Thrombolytic Era** *Stefan H. Hohnloser, Thomas Klingenheben, Markus Zabel, Matthias Schöpperl, Oliver Mauß*

1903 **Improved Survival Rates Support Left Ventricular Assist Device Implantation Early After Myocardial Infarction** *Jonathan M. Chen, Joseph J. DeRose, James P. Slater, Talia B. Spanier, Todd M. Dewey, Katherine A. Catanese, Margaret A. Flannery, Mehmet C. Oz*

1909 **The Significance of Stress-Induced ST Segment Depression in Patients With Inferior Q Wave Myocardial Infarction** *Abdou Elhendy, Ron T. van Domburg, Jeroen J. Bax, Jos R. T. C. Roelandt*

1916 **Increased Winter Mortality From Acute Myocardial Infarction and Stroke: The Effect of Age** *Tej Sheth, Cyril Nair, James Muller, Salim Yusuf*

HEART FAILURE

1920 **Aspirin and Mortality in Patients Treated With Angiotensin-Converting Enzyme Inhibitors: A Cohort Study of 11,575 Patients With Coronary Artery Disease** *Jonathan Leor, Henrietta Reicher-Reiss, Uri Goldbourt, Valentina Boyko, Shmuel Gottlieb, Alexander Battler, Solomon Behar*

1926 **Long-Term Effects of Carvedilol in Idiopathic Dilated Cardiomyopathy With Persistent Left Ventricular Dysfunction Despite Chronic Metoprolol** *Andrea Di Lenarda, Gastone Sabbadini, Luca Salvatore, Gianfranco Sinagra, Luisa Mestroni, Bruno Pinamonti, Dario Gregori, Fulvio Ciani, Aureo Muzzi, Silvio Klugmann, Fulvio Camerini, and The Heart-Muscle Disease Study Group*

1935 **Natural Variability of Circulating Levels of Cytokines and Cytokine Receptors in Patients With Heart Failure: Implications for Clinical Trials** *Ziad Dibbs, John Thornby, B. G. White, Douglas L. Mann*

1943 **Relationship Between Exertional Symptoms and Functional Capacity in Patients With Heart Failure** *John R. Wilson, Sai Hanamanthu, Don B. Chomsky, Stacy F. Davis*

1948 **Congestive Heart Failure in Subjects With Normal Versus Reduced Left Ventricular Ejection Fraction: Prevalence and Mortality in a Population-Based Cohort** *Ramachandran S. Vasan, Martin G. Larson, Emelia J. Benjamin, Jane C. Evans, Craig K. Reiss, Daniel Levy*

1956 **Capillary Density of Skeletal Muscle: A Contributing Mechanism for Exercise Intolerance in Class II–III Chronic Heart Failure Independent of Other Peripheral Alterations** *Brian D. Duscha, William E. Kraus, Steven J. Keteyian, Martin J. Sullivan, Howard J. Green, Fred H. Schachat, Anne M. Pippen, Clinton A. Brawner, Jason M. Blank, Brian H. Annex*

1964 **Outcome of Patients With Nonischemic Dilated Cardiomyopathy and Unexplained Syncope Treated With an Implantable Defibrillator** *Bradley P. Knight, Rajiva Goyal, Frank Pelosi, Matthew Flemming, Laura Horwood, Fred Morady, S. Adam Strickberger*

1971 Editorial Comment **Should ICDs Be Implanted in All Patients With Dilated Cardiomyopathy and Unexplained Syncope?** *Mark E. Josephson*

ELECTROPHYSIOLOGY

1974 **Implantable Atrial Defibrillator With a Single-Pass Dual-Electrode Lead** *Hung-Fat Tse, Chu-Pak Lau, Barry M. Yomtov, Gregory M. Ayers*

1981 **Evaluation of Right Atrial and Biatrial Temporary Pacing for the Prevention of Atrial Fibrillation After Coronary Artery Bypass Surgery** *Edward P. Gerstenfeld, Michael R. S. Hill, Steven N. French, Rahul Mehra, Karen Rofino, Thomas J. Vander Salm, Robert S. Mittelman*

1989 **Long-Term Reproducibility of Electrophysiologically Guided Therapy With Sotalol in Patients With Ventricular Tachyarrhythmias** *Christian Mewis, Volker Kühlkamp, Johann Mermi, Ralph F. Bosch, Ludger Seipel*

1996 **Partial Cavotricuspid Isthmus Block Before Ablation in Patients With Typical Atrial Flutter** *Atsushi Takahashi, Dipen C. Shah, Pierre Jaïs, Meleze Hocini, Jacques Clementy, Michel Haïssaguerre*

VALVE DISEASE

2003 **The Natural History of Aortic Valve Disease After Mitral Valve Surgery** *Mordehay Vaturi, Avital Porter, Yehuda Adler, Yaron Shapira, Gideon Sahar, Bernardo Vidne, Alex Sagie*

2009 Editorial Comment **"Prophylactic" Valve Replacement for Mild Aortic Valve Disease at Time of Surgery for Other Cardiovascular Disease? . . . . No** *Shahbudin H. Rahimtoola*

2016 **The Mitral Regurgitation Index: An Echocardiographic Guide to Severity** *Liza Thomas, Elyse Foster, Julien I. E. Hoffman, Nelson B. Schiller*

2023 **Value and Limitations of the Duke Criteria for the Diagnosis of Infective Endocarditis** *Gilbert Habib, Geneviève Derumeaux, Jean-François Avierinos, Jean-Paul Casalta, Fadi Jamal, Françoise Volot, Marc Garcia, Jean Lefevre, Frédéric Biou, Alexandre Maximovitch-Rodaminoff, P. E. Fournier, Pierre Ambrosi, Jean-Gabriel Velut, Alain Cribier, Jean-Robert Harle, Pierre-Jean Weiller, Didier Raoult, Roger Luccioni*

ENDOTHELIAL FUNCTION

2030 **Individual and Combined Effects of Estrogen/Progestin Therapy and Lovastatin on Lipids and Flow-Mediated Vasodilation in Postmenopausal Women With Coronary Artery Disease** *David M. Herrington, Brian L. Werbel, Ward A. Riley, Benjamin E. Pusser, Timothy M. Morgan*

2038 **Impaired Brachial Artery Endothelial Function Is Not Predicted by Elevated Triglycerides** *Greg B. Schnell, Annette Robertson, Deborah Houston, Linda Malley, Todd J. Anderson*

HYPERTROPHIC CARDIOMYOPATHY

2044 **Prognostic Value of Systemic Blood Pressure Response During Exercise in a Community-Based Patient Population With Hypertrophic Cardiomyopathy** *Iacopo Olivotto, Barry J. Maron, Alessio Montereggi, Francesco Mazzuoli, Alberto Dolara, Franco Cecchi*

PEDIATRIC CARDIOLOGY

2052 **Bubble Contrast Echocardiography in Detecting Pulmonary Arteriovenous Shunting in Children With Univentricular Heart After Cavopulmonary Anastomosis** *Ruey-Kang R. Chang, Juan C. Alejos, David Atkinson, Richard Jensen, Stacey Drant, Alvaro Galindo, Hillel Laks*

2059 **Neurally Mediated Cardiac Syncope: Autonomic Modulation After Normal Saline Infusion** *Thomas R. Burklow, Jeffrey P. Moak, James J. Bailey, Fairouz T. Makhlouf*

2067 **Idiopathic Ventricular Tachycardia in Infancy and Childhood: A Multicenter Study on Clinical Profile and Outcome** *Jean-Pierre Pfammatter, Thomas Paul, on behalf of the Working group on Dysrhythmias and Electrophysiology of the Association for European Pediatric Cardiology*

EXPERIMENTAL STUDY

2073 **Persistent Primary Coronary Dilation Induced by Transatrial Delivery of Nitroglycerin Into the Pericardial Space: A Novel Approach for Local Cardiac Drug Delivery** *Sergio Waxman, Ricardo Moreno, Katharine A. Rowe, Richard L. Verrier*

PERSPECTIVE

2078 **Lipid-Lowering Therapy for the Primary Prevention of Coronary Heart Disease** *Antonio M. Gotto, Jr.*

EDITOR'S PAGE

2083 **Editorial Independence—What Did We Learn From the *Journal of the American Medical Association?*** *William W. Parmley*

SPECIAL SECTIONS

ACC News

2085 **President's Page: The ACC and Subspecialty Societies: The Beauty of the Quilt** *Arthur Garson, Jr.*

2087 **LETTERS TO THE EDITOR**

2091 **CORRECTIONS**

ACC/AHA/ACP-ASIM Practice Guidelines

2092 **ACC/AHA/ACP-ASIM Guidelines for the Management of Patients With Chronic Stable Angina** *Raymond J. Gibbons, Chair*

2198 **ADDENDUM**

ACC—Letter to the Membership

2199 **Letter to the Membership: Search for *JACC* Editor-in-Chief Underway**

Indexes

2200 **Author Index: Volume 33**

2205 **Subject Index: Volume 33**